

ELECTRONIC COMPONENT

BILINGUAL SECTION
TECHNOLOGY

CONTROL SYSTEM

- Where are control systems ?
- A CONTROL SYSTEM DOES ASKS AUTOMATICALLY



WE CAN USE AN ELECTROMECHANICAL CONTROL SYSTEM.....



- OR WE CAN USE AN
ELECTRONIC CONTROL
SYSTEM

DIFFERENCES BETWEEN ELECTRONIC AND ELECTRICITY

1-IN ELECTRICITY ELECTRONS
TRANSPORT ENERGY

2-ELECTRICITY USES A HIGH
VOLTAGE (220 VOLT

.3- ELECTRONIC
COMPONENTS ARE MADE
OF CONDUCTOR AND
SEMICONDUCTOR

4-ELECTRONIC COMPONENTS
ARE WIRE ,BULBS, SWITCH,

.....

1-IN ELECTRONIC ELECTRONS
TRANSPORT INFORMATION

2--ELECTRONIC USES A LOW
VOLTAGE (15 VOLTS)

3-ELECTRONIC COMPONENTS
ARE MADE OF
SEMICONDUCTOR
MATERIAL

4-ELECTRONIC COMPONENTS
ARE RESISTORS ,DIODES,
TRANSISTORS.....

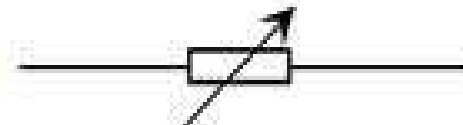
ELECTRONIC RESISTOR

- WE USE RESISTOR IN ELECTRONIC TO CONTROL CURRENT. IN ELECTRICITY WE USE RESISTORS TO PRODUCE HEAT
- TYPES OF RESISTORS
 - 1-VARIABLE RESISTOR
 - 2-FIXED RESISTOR
 - 3-PHOTORESISTOR
 - 4-THERMALRESISTOR

Fixed Resistor



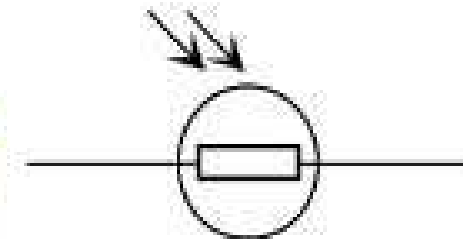
Variable Resistor



Thermistor

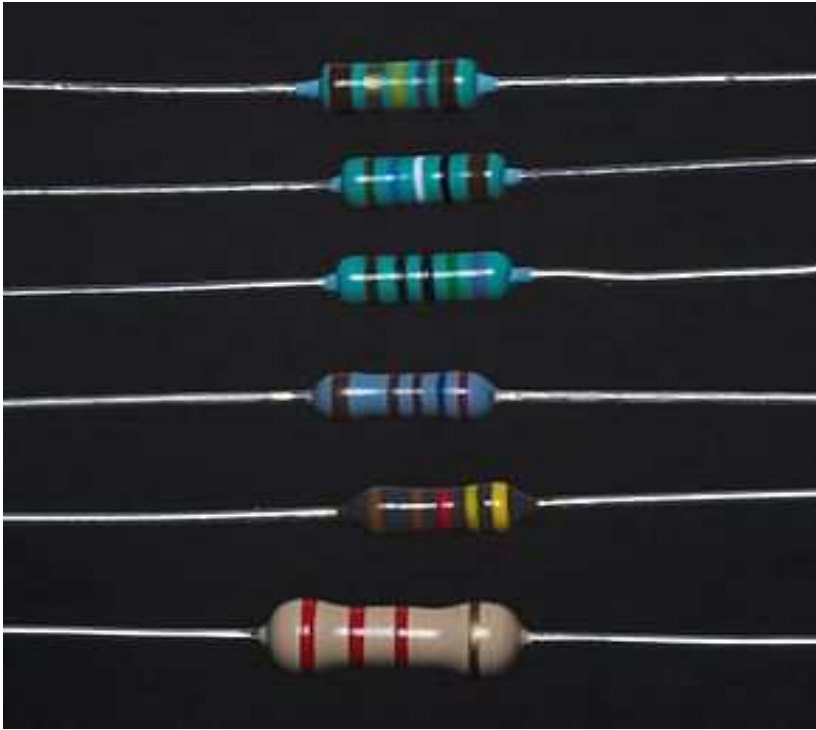


Light Dependant Resistor (LDR)



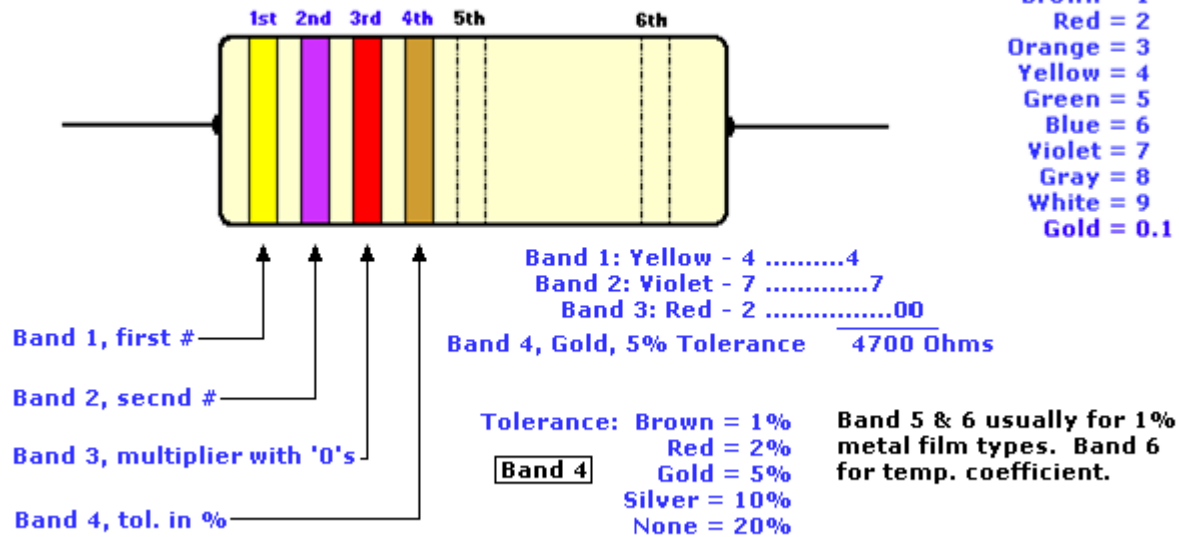
FIXED RESISTOR

- THE VALUE IS FIXED



THE RESISTOR COLOUR CODE

Example: 4.7K or 4700 ohms (Carbon)



Indicate the colour codes in these resistors

470 ohm, 2% = _____

6800 ohm, 10% = _____

3K3, 5% = _____

1K, 5% = _____

150 ohm, 1% = _____

2M9, 10% = _____

10M, 10% = _____

1 Mega Ohm, 5% = _____

1 ohm, 1% = _____

3M9, 20% = _____

1200 ohm, 5% = _____

1K2, 5% = _____

220 ohm, 1% = _____

3300 ohm, 2% = _____

47 ohm, 5% = _____

390 ohm, 5% = _____

3900 ohm, 2% = _____

100.000 ohm, 5% = _____

10K, 5% = _____

10.000 ohm, 5% = _____

1500 ohm, 2% = _____

56K, 5% = _____

1M, 10% = _____

470K, 1% = _____

1.8 ohm, 2% = _____

2.2 ohm, 1% = _____

2K76, 1% = _____

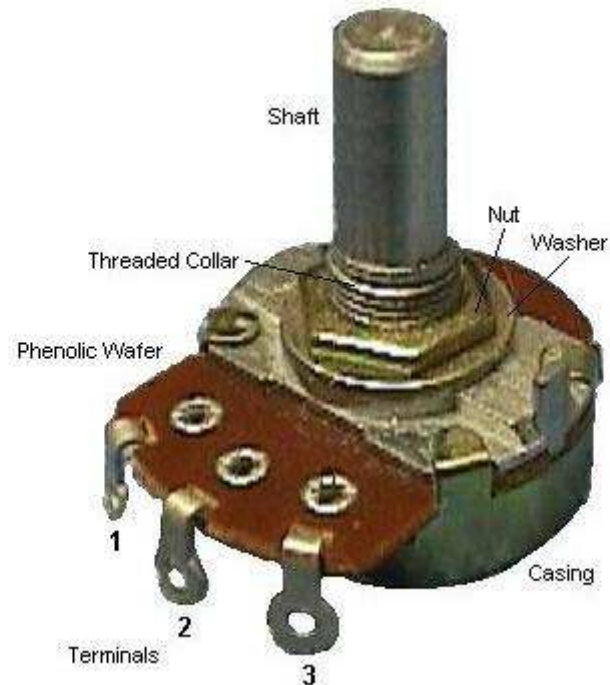
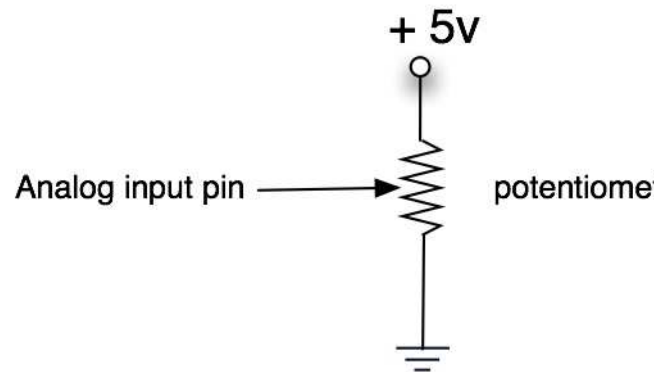
94.1K, 2% = _____

POTENTIOMETER

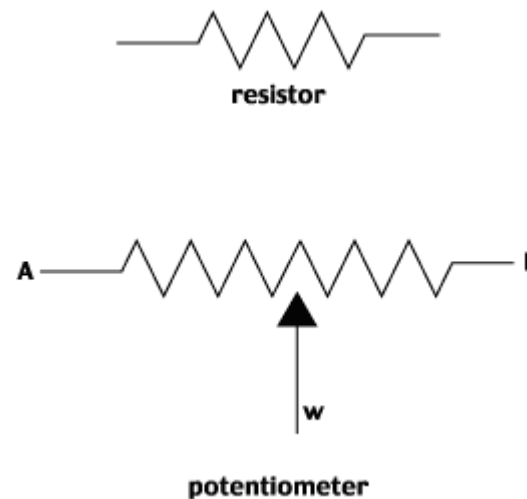
You can vary the value of resistance by turning a dial.



Potentiometer connected to the analog input

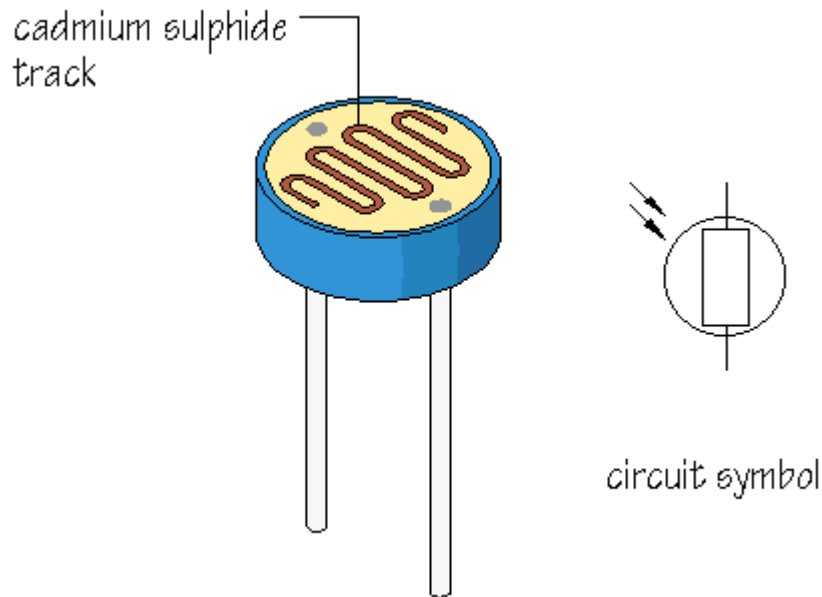


- The resistance depend of the lenght, If you move the dial you change this lenght between the contac W and contac Bt
- **Application.it is used as a sound dial in a radio.**



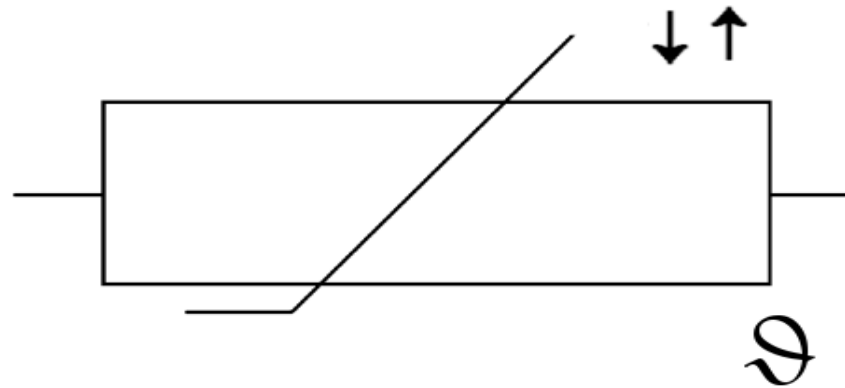
PHOTORESISTANCE

- A LDR or light dependent resistor is a resistor that varies its resistance according to the light that falls on its surface. If the light increases the resistance decreases
- **Application-This is used to turn on the street light At night**



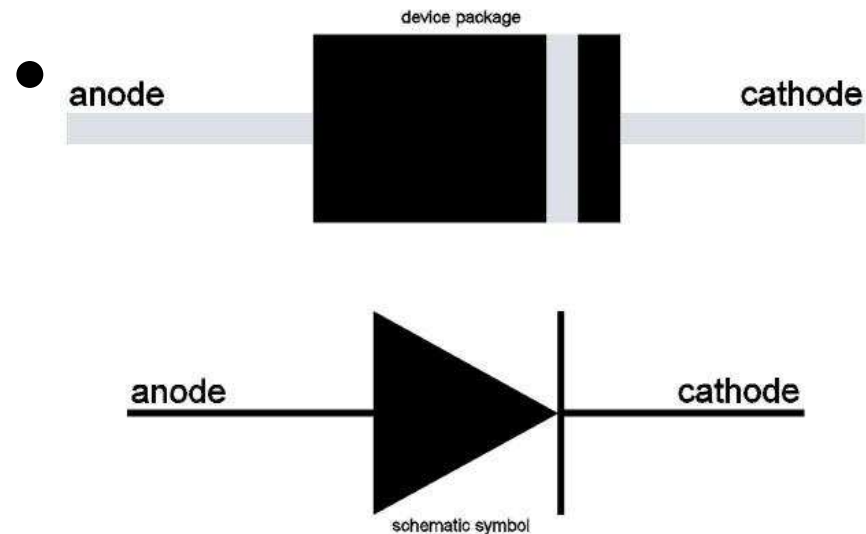
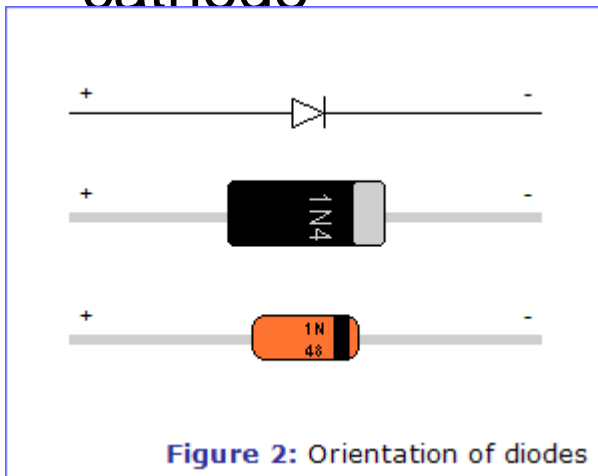
THERMISTOR

- Thermistor resistor is a resistance according to temperature. If the temperature increases the resistance decreases. **Applications .this component is used in a fire alarm)**

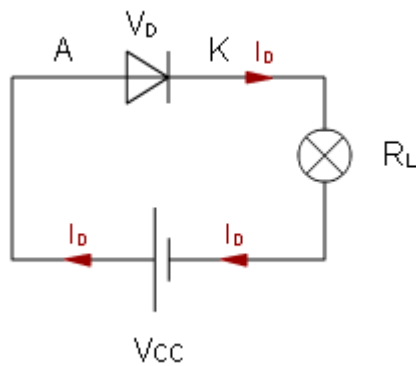


DIODES

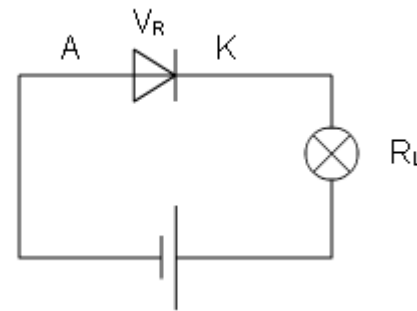
- The diode will allow electricity to pass through it in one direction only.
- Diode has two terminals :the terminal that has a grey band is called anode and the other terminal is called cathode
- The diode symbol is an arrow that goes from anode to cathode



- If the current flow from the anode to the cathode the diode lets pass the current through it



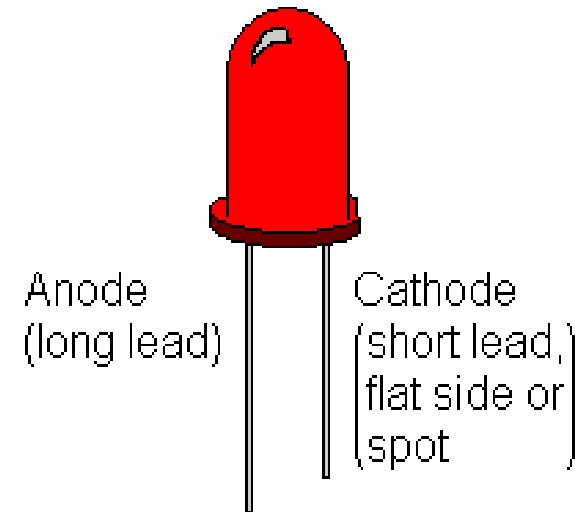
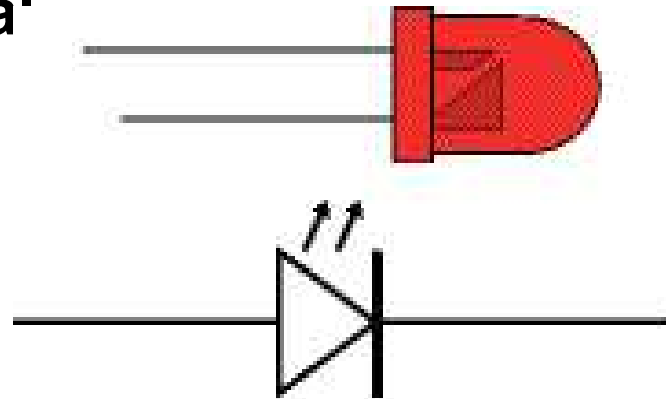
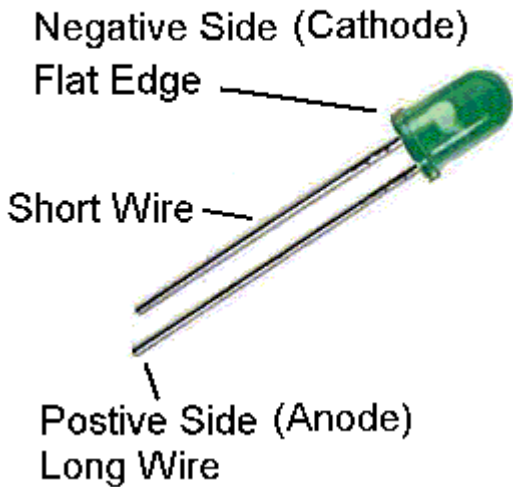
- If the current flow from the cathode to the anode the diode don't let pass the current through it



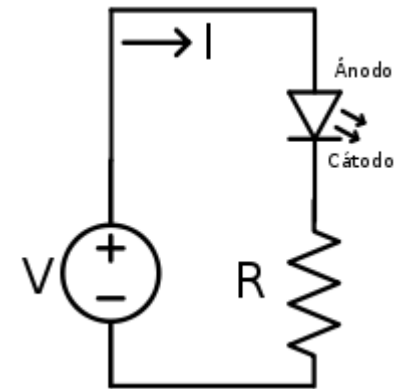
LEDS

- A LED IS A DIODE THAT EMITS LIGHT WHEN the CURRENT GOES FROM THE ANODE TO DE CATHODE.
- **.The anode is a short terminal and a cathode is a longer termina'**

LED



- If the led is connected correctly it works
- In other case it don't work:



Examples



Applications : pilot light that indicates if an electrical device is working and is used to make numbers and letters.... in a display (alarm clock)(crossing light)